confirms the diagnosis by showing a decreased rate of growth of the fetal biparietal diameter and a decrease in the total intrauterine volume associated with oligohydramnios. More recently, concomitant measurements of head-to-body circumference ratios have proved helpful in delineating IUGR.

When it has been determined that an aberration in growth exists during pregnancy, management includes counseling of parents, consultation with a neonatologist and tests to evaluate fetal well-being. The latter include electronic monitoring of the fetal heart rate responses to fetal movement and to uterine contractions. If these responses are normal and maternal vascular disease is absent, the patient may continue her pregnancy to term. Consideration of delivery before term may be an option when fetal lung maturity has been achieved. Because poor oxygenation often results in birth asphyxia in these infants during labor, fetal heart rate monitoring is indicated; a cesarean section should be seriously considered.

A neonate with IUGR has a constellation of problems which may include birth asphyxia with its associated complications of meconium aspiration pneumonitis and central nervous system depression as well as hypoglycemia, hypocalcemia, temperature instability and polycythemia. Problems related to congenital malformations and infections also occur. Close observation to prevent birth asphyxia in the prepartum and intrapartum periods and intensive neonatal supportive care result in the best long-term outcome.

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Recent Advances in Prenatal Diagnosis of Genetic Defects

A SIGNIFICANT ADVANCE in medical genetics is the ability to make an in utero diagnosis of genetic defects. The study of amniotic fluid constituents allows the diagnosis of all chromosomal and many metabolic abnormalities. However, some disorders are not manifested by changes in amniotic fluid constituents. The development of fetoscopy and the ability to obtain fetal blood specimens makes possible prenatal diagnosis of diseases not possible by amniocentesis—among these are the hemoglobinopathies.

Since the first reports of the prenatal diagnosis of a hemoglobinopathy over 700 pregnancies have been monitored. Both structural abnormalities (such as sickle cell) and abnormalities of synthesis rates of globin chains can be diagnosed in utero. The risk of fetal death and spontaneous abortion from fetoscopy and fetal blood sampling is approximately 4 percent to 5 percent when done by an experienced physician.

Some cases of sickle cell anemia can be diagnosed in utero using only amniocentesis. These techniques involve use of restriction endonucleases, enzymes which cleave DNA within specific base-sequence recognition sites. There is an endonuclease-defined DNA mutation on the same chromosome as (but not part of or related to) the sickle mutation in 50 percent to 60 percent of American blacks carrying the sickle mutation. Therefore, in this proportion of the families at risk, a prenatal diagnosis can be accomplished with amniotic fluid cells (which contain DNA) instead of fetoscopic blood sampling.

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The Value of Microsurgery in Tubal Repair

THE MICROSURGICAL APPROACH has been applied to every form of tubal repair, but its value has been definitely established only in reversal of female sterilization. Microsurgery appears to be of some value in repair of salpingostomy in cases of chronic pelvic inflammatory disease in that it results in 25 percent to 30 percent intrauterine pregnancies; at the same time, however, it increases the rate of ectopic pregnancies from between 2 percent and 4 percent to between 10 percent and 18 percent. It is of technical value in implantation procedures, but in only one report has the technique improved the percentage of intrauterine pregnancies reaching term.

Success with reversal of sterilization largely depends on how the sterilization was originally done. Unipolar cautery yields the worst prognosis for reversal whereas use of a tubal clip appears to

allow the best. Bipolar cauterization, the Falope Ring and the Pomeroy techniques offer an intermediary prognosis. The site of anastomosis is also pertinent to prognosis. An anastomosis between the cornu-isthmus or isthmus-isthmus yields the best results (a pregnancy rate of 70 percent to 75 percent). Poorer results (a pregnancy rate of 45 percent to 55 percent) are obtained when the anastomosis involves the cornu-ampulla or ampulla-ampulla.

When microsurgical techniques are used to reverse sterilization, intrauterine pregnancy rates of 58 percent and 65 percent have been reported in large series of patients by Winston and Gomel, respectively. In a smaller series (47 patients) followed for more than 18 months, Gomel reported a pregnancy rate of 81 percent. By comparison, *macro*surgical techniques for reversal of sterilization have resulted in 21 percent to 37 percent pregnancy rates.

Despite variations in technique, it is evident that microsurgical procedures for the reversal of sterilization in women offer substantially improved results.

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Antiprostaglandin Compounds in the Management of Primary Dysmenorrhea

WHILE THE EXACT incidence of dysmenorrhea is unknown, it appears to affect 30 percent to 50 percent of young women, causing them to lose time from work and school.

Primary dysmenorrhea occurs only in ovulatory cycles and is characterized by an absence of pelvic pathology and the presence of a variable number of systemic symptoms, including nausea, vomiting, diarrhea, headache, fatigue, dizziness and lower backache.

In the 1950's it was first suggested and subsequently proved that excessive prostaglandin action results in many of the symptoms of dysmenorrhea. In the early 1970's several papers were presented that indicated that nonsteroidal anti-inflammatory agents such as aspirin, indomethacin and naproxen, inhibited uterine contractions. Arachidonic acid is converted to prostaglandin through a number of steps. The first is the formation of a cyclic endoperoxidase. It is this step that is inhibited by the nonsteroidal anti-inflammatory drugs to prevent the production of excess prostaglandin.

A clearer understanding has been gained of the pathophysiology of dysmenorrhea and the efficacy of these inhibitors of prostaglandin synthesis in providing symptomatic relief, with the result that naproxen sodium and ibuprofen are among the drugs approved by the Food and Drug Administration for treatment of primary dysmenorrhea. Relief from symptoms is excellent for most patients, and these treatment compounds are well tolerated with minimal side effects. Most women who were formerly physically incapacitated by primary dysmenorrhea are now able to return to productive activity through use of these nonsteroidal anti-inflammatory compounds.

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A New and Effective Treatment of Hirsutism

HIRSUTISM, an androgen-dependent manifestation of accelerated hair growth, occurs in women having either ovarian or adrenal overproduction of androgens or hypersensitivity of hair follicles to androgenic stimulation (idiopathic hirsutism). In the past, satisfactory medical treatments have not been available. Recently, however, an understanding of the role of androgenic receptors in hair follicles combined with the characterization of several compounds that have antiandrogenic properties have afforded a new approach in the treatment of hirsutism.

Spironolactone (Aldactone), an aldosterone agonist, currently used as a diuretic and in the treatment of mild hypertension, has been found to possess several antiandrogenic properties. It has the ability to inhibit the cytochrome P-450 enzyme systems, which are required for the biosynthesis of androgens (by way of hydroxylation) in both the gonadal and adrenal steroid-producing cells and, consequently, result in reduced androgen secretion. It also inhibits the androgenic action of testosterone and its 5α-reduced metabolite, 5α-